

Abstract

A target detection and tracking system provides adaptive image processing for an IRST sensor system. The adaptive image processing includes an adaptive spatial filtering technique that uses high-pass filtering and adaptive thresholding to reduce the false alarm rate in the presence of background clutter containing high spatial frequency components. The adaptive spatial filtering technique may be combined with a spot time-differencing technique that performs time-differencing processing only for areas of detection in high clutter sub-regions based on the adaptive spatial filtering results which maintains a low false alarm rate for light clutter sub-regions.